CLAIMS

I claim:

1. A metering device, the metering device incorporating an elongate chamber, there being a shuttle contained within the chamber, the shuttle having a portion which is a substantially sealing sliding fit within the chamber, the shuttle being moveable axially between an initial position and a second position within the chamber, each end of the chamber being provided with a fluid flow duct through which pressured fluid may enter and leave the chamber, there being valve arrangement to control the flow of fluid to and from the chamber such that, during successive cycles of operation of the metering device, fluid is supplied to one end of the chamb6r causing the shuttle to move from the initial position at said one end of the chamber to the second position at the other end of the chamber, thus ejecting a pre-determined volume of fluid from the other end of the chamber, and subsequently fluid is supplied to said other end of the chamber causing the shuttle to move back from the second position to the initial position, ejecting a pre-determined quantity of fluid from the said one end of the chamber, the valving means comprising a rotary valve rod contained within a valve bore, and a mechanism to rotate the valve rod, the fluid flow ducts from the chamber extending to the valve bore, at least one fluid inlet extending to the valve bore and at least one fluid outlet extending from the valve bore, the valve rod, in combination with the valve bore, defining fluid flow passages which, in one orientation of the valve rod, serve to interconnect a fluid flow inlet and the fluid flow duct extending to one end of the chamber whilst interconnecting the fluid flow duct extending to the other end of the chamber with an outlet and, in an alternate orientation, serving to interconnect the fluid flow inlet with the fluid flow duct extending to the other end of the bore whilst connecting the fluid flow duct extending to the said one end of the bore with an outlet.

2. A metering device according to Claim 1 wherein the valve rod is rotated by a motor arrangement, the motor arrangement being controlled in response to a signal generated in response to the shuttle reaching the initial position or the second position.

3. A metering device according to Claim 2 wherein the motor arrangement is a stepping motor.

4. A metering device according to Claim 2 wherein the shuttle is provided with two rods, each rod extending beyond the chamber, there being a contact or proximity sensor located adjacent the end of each rod, to generate a said signal when the shuttle reaches the initial position and the second position.

5. A metering device according to Claim 4 wherein adjustable collars are provided on the shuttle rods to limit the movement of the shuttle.

6. A metering device according to any one of Claim 1 wherein at least one air bleed is provided communicating with part of said chamber to bleed air from the chamber.